

CLAIMS

What is claimed is:

1. A split leaf filter, comprising:
 - a filter shell;
 - a sluice manifold disposed in said filter shell;
 - at least one outlet manifold disposed in said filter shell;
 - a vibrator bar disposed in said filter shell;
 - an array of parallel spaced split leaf assemblies disposed in said filter shell;
 - said split leaf assemblies each comprising at least two split leaf elements arranged in coplanar adjacent relationship;
 - said split leaf elements each having a first edge section connected to one of said outlet manifolds;
 - said split leaf elements each having a second edge section that is generally parallel to said first edge section and connected to said vibrator bar;
 - at least some of said split leaf elements having a third edge section that is generally perpendicular to said first and second edge sections and longitudinally interconnected with corresponding edge sections of split leaf elements in a set of adjacent ones of said split leaf assemblies, said set representing fewer than all of said split leaf assemblies disposed in said split leaf filter; and
 - said split leaf elements each having a fourth edge section arranged in adjacent parallel relationship along the substantial entirety thereof with a corresponding fourth edge section of another split leaf element of the same split leaf assembly.
2. A split leaf filter in accordance with Claim 1 wherein said array of split leaf assemblies is oriented generally parallel to said vibrator bar.

3. A split leaf filter in accordance with Claim 1 wherein said split leaf assemblies are twin split leaf assemblies comprising two symmetrical split leaf elements;
4. A split leaf filter in accordance with Claim 1 wherein said at least one outlet manifold comprises a number of outlet manifolds that equals the number of split leaf elements in one of said split leaf assemblies;
5. A split leaf filter in accordance with Claim 1 wherein a filtrate discharge nozzle is mounted on each of said first split leaf element edge sections and connected to one of said outlet manifolds.
6. A split leaf filter in accordance with Claim 1 wherein a retainer bar connects said second split leaf element edge sections of split leaf elements in a single split leaf assembly to said vibrator bar.
7. A split leaf filter in accordance with Claim 5 wherein said retainer bar is removably mounted to said split leaf elements.
8. A split leaf filter in accordance with Claim 1 wherein, for each interconnected set of said split leaf assemblies, there is at least one spacer bar mounted to said third split leaf element edge sections of split leaf elements in each interconnected split leaf assembly.
9. A split leaf filter in accordance with Claim 8 wherein there are two spacer bars mounted to said third split leaf element edge sections.
10. A split leaf filter in accordance with Claim 9 wherein said spacer bars are received through apertured tabs connected to said third split leaf element edge sections.

11. A split leaf filter in accordance with Claim 10 wherein said apertured tabs include plural apertures to facilitate alternative placement of said spacer bars and to allow split leaf assemblies that are common to two of said interconnected sets of split leaf assemblies to receive spacer bars associated with each set and thereby facilitate joinder of adjacent ones of said interconnected sets.

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12. A split leaf element for use in forming a split leaf assembly in a split leaf filter, said split leaf element comprising:

a first edge section adapted to mount to an outlet manifold in said split leaf filter;
a second edge section generally parallel to said first edge section and adapted to mount to a vibrator bar in said split leaf filter;
a third edge section adapted for interconnection with a fourth edge section of a split leaf element of an adjacent split leaf assembly in said split leaf filter; and
a fourth edge section that is adapted to be arranged in adjacent parallel relationship along the substantial entirety thereof with a corresponding fourth edge section of a mating split leaf element of a common split leaf assembly.

13. A split leaf element in accordance with Claim 12 wherein said first edge section has a filtrate discharge nozzle mounted thereto for connection to said outlet manifold.

14. A split leaf element in accordance with Claim 11 wherein said second edge section has a retainer stud mounted thereto for connection to a retainer bar that mounts to said vibrator bar.

15. A split leaf element in accordance with Claim 14 wherein said retainer stud is adapted for removable connection to said retainer bar.

16. A split leaf element in accordance with Claim 12 wherein said third edge section has at least one leaf spacer tab mounted thereto, said spacer tab having at least one

aperture therein for receiving a leaf spacer bar that interconnects a set of split leaf assemblies in said split leaf filter.

17. A split leaf element in accordance with Claim 16 wherein said spacer tab has plural apertures therein for receiving plural leaf spacer bars that join two of said interconnected sets of split leaf assemblies.

18. A split leaf assembly kit for a split leaf filter, comprising;
a pair of split leaf elements, each split leaf element having:
a first edge section;
a filtrate discharge nozzle secured to said first edge section and adapted for connection to a pressure leaf filter outlet manifold;
a second edge section;
a stud secured to said second edge section and adapted to for connection to a top retainer member;
a top retainer member;
a third edge section;
a spacer tab secured to said third edge section, said spacer tab being apertured to receive a leaf spacer bar;
one or more leaf spacer bars; and
a fourth edge section adapted to be arranged in adjacent parallel relationship along the substantial entirety thereof with a corresponding fourth edge section of the other split leaf element of said pair.

19. A split leaf assembly kit in accordance with Claim 18 wherein means for removably securing said one or more leaf spacer bars to said spacer tab.

20. A split leaf filter, comprising:

a filter shell, said filter shell being generally tubular in configuration and having a longitudinal axis;

a pair of sluice manifolds extending longitudinally in said filter shell;

a pair of outlet manifolds extending longitudinally in said filter shell;

a vibrator bar extending longitudinally in said filter shell;

a longitudinal array of parallel spaced split leaf element pairs disposed in said filter shell;

each split leaf element pair having two symmetrical split leaf elements arranged in coplanar side-by-side relationship at mutually adjacent edge sections thereof;

said mutually adjacent edge sections being parallel to each other and in mutual contacting relationship along the substantial entirety thereof;

each split leaf element of said split leaf element pairs further having first and second edge sections that are generally perpendicular to said mutually adjacent edge sections, and a third edge section that is spaced from and generally parallel to said mutually adjacent edge sections;

a filtrate discharge nozzle mounted to said first edge section of each of said split leaf elements, said discharge nozzle being mounted to an associated one of said one outlet manifolds;

a retainer stud extending from said second edge section of each of said split leaf elements;

a top retainer removably mounted to said retainer studs of each of said split leaf element pair, said top retainer further being centrally connected to said vibrator bar;

a pair of leaf spacer tabs mounted to said third edge section of each of said split leaf elements, each of said leaf spacer tabs having at least two apertures located at predetermined locations such that the spacer tab apertures on longitudinally adjacent ones of said split leaf element pairs are in mutual longitudinal coaxial alignment and define at least two aperture levels;

a plurality of leaf spacer bars interconnecting sets of longitudinally adjacent ones of said split leaf element pairs, each said set representing fewer than all of said split leaf element pairs disposed in said split leaf filter;

said spacer bars of each adjacent set of split leaf element pairs being received through alternating aperture levels of said spacer tabs to facilitate alternative placement of said spacer bars and to allow split leaf element pairs that are common to two of said interconnected sets to receive spacer bars associated with each set and thereby facilitate joinder of adjacent ones of said interconnected sets.